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Dong-Hyun Chang

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EXAMINER

CHOI, MICHAEL P

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/743,378	Applicant(s) CHANG, DONG-HYUN	
	Examiner Michael Choi	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

As per remarks on pages 9 and 10, applicant argues that the combination of Rodriguez, Yamaguchi and Matsunaga fail to teach each limitation of independent claim 1.

In response, Rodriguez and Yamaguchi teach all the limitations of claim 1 along with the newly amended claim limitation where Rodriguez teaches a receiving unit for receiving a compressed multimedia signal (Fig. 2, 242 – communication interface; Paragraph [0039]); a decoder unit for decoding the multimedia signal into a data stream having a predetermined format (Fig. 2, 216 – analog video decoder); a data compression unit for reducing a data amount of the data stream by a certain amount and encoding a reduced data stream (Fig. 2, 212 – down-converter); a compression select unit for generating at least four control signals (Fig. 2, 212 – down-converter signals along bus, 205; Paragraph [0042]; to a decoder Fig. 2, 226; control to storage Fig. 2, 273; and Paragraphs [0043,0067,0097,0123] – compression engine and down-converter employing filters controlling scaling; and Paragraphs [0040,0041] – remote control with user inputs) and selecting a data compression unit using one of the at least four control signals (Paragraph [0018]; Figure 9E – selection of appropriate upconversion filter for compression), wherein the data compression unit reduces the data amount by the compression select unit using a selected one of frame reduction, format conversion, and resolution reduction (in at least Paragraph [0055] – format conversion to digital) but is silent to selecting a compressibility and reducing the data according to a compressibility selected. Yamaguchi et al. teaches selecting a compressibility and reducing the data according to a compressibility

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selected (Paragraphs [0101,0104,0110] – selection of picture compression and steps of changing and compression) wherein it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable selection of a compression allowing a user to change and alter signals accordingly to save recording space and minimizing buffer overflow when data is received (Yamaguchi Paragraph [0101]).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-16, and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodriguez (US 2004/0008790 A1) in view of Yamaguchi et al. (US 2002/0154699 A1).

Regarding Claims 1 and 12, Rodriguez teaches an apparatus for recording multimedia data comprising:

- a receiving unit for receiving a compressed multimedia signal (Fig. 2, 242 – communication interface; Paragraph [0039]);
- a decoder unit for decoding the multimedia signal into a data stream having a predetermined format (Fig. 2, 216 – analog video decoder);
- a data compression unit for reducing a data amount of the data stream by a certain amount and encoding a reduced data stream (Fig. 2, 212 – down-converter);
- a compression select unit for generating at least four control signals (Fig. 2, 212 – down-converter signals along bus, 205; Paragraph [0042]; to a decoder Fig. 2, 226; control to

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storage Fig. 2, 273; and Paragraphs [0043,0067,0097,0123] – compression engine and down-converter employing filters controlling scaling; and Paragraphs [0040,0041] – remote control with user inputs) and selecting a data compression unit using one of the at least four control signals (Paragraph [0018]; Figure 9E – selection of appropriate upconversion filter for compression),

- wherein the data compression unit reduces the data amount by the compression select unit using a selected one of frame reduction, format conversion, and resolution reduction (in at least Paragraph [0055] – format conversion to digital).

Rodriguez fails to explicitly teach selecting a compressibility and reducing the data according to a compressibility selected. Yamaguchi et al. teaches selecting a compressibility and reducing the data according to a compressibility selected (Paragraphs [0101,0104,0110] – selection of picture compression and steps of changing and compression).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable selection of a compression allowing a user to change and alter signals accordingly to save recording space and minimizing buffer overflow when data is received (Yamaguchi Paragraph [0101]).

Regarding Claims 2 and 13, Rodriguez teaches the apparatus of claim 1 and 12 respectively, wherein the decoder unit comprises: a demodulator for removing a carrier wave from the multimedia signal (Fig. 2, 215; Paragraph [0049] – precluding irrelevant or undesired packets); a demultiplexer for decoding the multimedia signal into a video signal and an audio signal after the carrier wave is removed from the multimedia signal (Fig. 2, 215; Paragraph [0042]); and a decoder for decompressing the video signal and the audio signal (Fig. 2, 216; Paragraph [0042]).

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Rodriguez discloses the claimed invention as a demodulating system and a transport demultiplexing and parsing system (referred to as demultiplexing system) as a separate component other than a decoder unit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the decoder along with the signal processing system encompassing the demultiplexer and demodulator systems, since it has been held that making previously separate components integral into one unit without producing any new and unexpected result involves only routine skill in the art. See *In re Larson*, 340 F.2d 965, 968; 144 USPQ 347, 349 (CCPA 1965).

Regarding Claims 3 and 14, Rodriguez teaches the apparatus of claim 2 and 13 respectively, further comprising a format setting unit for setting the format of the video signal and the audio signal from the demultiplexer to one of PES in a packet unit (Paragraph [0056] – output packetized elementary stream inside a transport stream) and TS in a pack unit (Paragraph [0047] – output as a transport stream).

Regarding Claims 4 and 15, Rodriguez teaches the apparatus of claim 1 and 12 respectively, wherein the data compression unit comprises: a data conversion unit for reducing a portion of the data of a decompressed video signal and audio signal according to the compressibility selected by the compression select unit (Fig. 2, 212 – down-converter; Paragraphs [0043-0045]); and an encoder unit for recompressing video data and audio data after a portion of the data is reduced by a data conversion unit (Fig. 2, 226 – digital encoder; Paragraph [0048]).

Rodriguez discloses the claimed invention as a compression and decompression engine, which are connected by a bus in order to have an encoder unit for decompression after

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being reduced. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the compression and decompression engines, since it has been held that making previously separate components integral into one unit without producing any new and unexpected result involves only routine skill in the art. See *In re Larson*, 340 F.2d 965, 968; 144 USPQ 347, 349 (CCPA 1965).

Regarding Claims 5 and 16, Rodriguez teaches the apparatus of claim 4 and 15 respectively, wherein the data conversion unit comprises:

- a memory for storing the decompressed data from the decoder in a frame unit (Fig. 2, 273 – storage device);
- a frame setting unit, enabled by the compression select unit, for removing frames of the data stored on the memory and re-storing (Paragraph [0061] – multiple simultaneous data transfer operations) the data in the memory (Paragraph [0063] – eliminating frames); and
- an encoder for compressing the data stream re-stored (Paragraph [0061] – multiple simultaneous data transfer operations) in the memory (Fig. 2, 226 – digital encoder).

Regarding Claims 7 and 18, Rodriguez teaches the apparatus of claim 5 and 16 respectively, further comprising a format conversion unit, enabled by the compression select unit, for converting the signal format of the video signal held in the memory to 4:2:0 format and re-storing the data in the memory (Paragraphs [0043-0045]).

Regarding Claims 8 and 19, Rodriguez teaches the apparatus of claim 7 and 18 respectively, further comprising a scaler, enabled by the compression select unit, for reducing

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the resolution of the video signal stored in a frame unit on the memory to a certain resolution and re-storing the data in the memory (Paragraphs [0043-0045] – scaling functionality maintained in memory; Paragraphs [0067,0097,0123]).

Regarding Claims 9 and 20, Rodriguez teaches the apparatus of claim 8 and 19 respectively, wherein the compression select unit generates a first control signal that causes the video signal and the audio signal to be outputted (Fig. 2, 212 – down-converter signals along bus, 205; Paragraph [0042]) to any one of the decoder (Fig. 2, 226) and the storage unit (Fig. 2, 273) by controlling the demultiplexer (Fig. 2, 215; Paragraph [0047]), and a second control signal that causes at least one of the frame setting unit, the format conversion unit and the scaler to be enabled by controlling the data conversion unit (Paragraphs [0043,0067,0097,0123] – compression engine and down-converter employing filters controlling scaling).

Regarding Claims 10 and 21, Rodriguez teaches the apparatus of claim 1 and 12 respectively, wherein the predetermined format is selected from the group consisting of MPEG-1, MPEG-2, MPEG-3, and MPEG-4 (Paragraph [0037]).

Regarding Claims 11 and 22, Rodriguez teaches the apparatus of claim 1 and 12 respectively, wherein the receiving unit receives a multimedia signal compressed with any one of the compression formats selected from the group consisting of MPEG-1, MPEG-2, MPEG-3, and MPEG-4 (Paragraph [0037]).

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4. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodriguez (US 2004/0008790 A1) in view of Yamaguchi et al. (US 2002/0154699 A1) in further view of Matsunaga et al. (US 2001/20176503 A1).

Regarding Claims 6 and 17, Rodriguez teaches the apparatus of claim 5 and 16 respectively, wherein the frame setting unit removes frames but fails to explicitly teach even-numbered frames. Matsunaga teaches the frame setting unit removes even-numbered frames (Paragraph [0062]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine a frame eliminating element to removed even numbered frames for frame removal processing in order to convert to a lower frame rate (Paragraph [0062]).

5. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodriguez (US 2004/0008790 A1) in view of Yamaguchi et al. (US 2002/0154699 A1) in further view of Acampora et al. (US 4,575,749).

Regarding Claims 23 and 25, Rodriguez and Yamaguchi teach the apparatus and method of claims 1 and 12, respectively, wherein the control signal which is used to select the compressibility of the data compression unit (Paragraph [0018]; Figure 9E – selection of appropriate upconversion filter for compression) but fail to explicitly teach that it is a two-bit control signal.

Acampora et al. teaches the 2-bit control signal (Col. 2, lines 26-68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a two-bit

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control signal, especially in the case of plural signals, so as to allow certain control signals to be switched from an off state to an on state or vice versa allowing one control signal to reach destination for selected control purposes.

6. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodriguez (US 2004/0008790 A1) in view of Yamaguchi et al. (US 2002/0154699 A1) in further view of Haddad et al. (US 2003/0043924 A1).

Regarding Claim 24 and 26, Rodriguez and Yamaguchi teach the apparatus and method of claims 1 and 12, respectively, wherein the at least four control signals (Fig. 2, 212 – down-converter signals along bus, 205; Paragraph [0042]; to a decoder Fig. 2, 226; control to storage Fig. 2, 273; and Paragraphs [0043,0067,0097,0123] – compression engine and down-converter employing filters controlling scaling) comprises a first control signal for setting an output direction of the data stream (Fig. 2, 212 – down-converter signals along bus, 205; Paragraph [0042]), a second control signal for setting a compression method of the supplied data stream in the data compression unit (Paragraphs [0043,0067,0097,0123] – compression engine and down-converter employing filters controlling scaling), a third control signal for enabling/disabling a decompression unit (Paragraphs [0040,0041] – remote control with user inputs), and a fourth control signal for setting a format of the data stream outputted from the decoder unit (Paragraph [0056] – output packetized elementary stream inside a transport stream; Paragraph [0047] – output as a transport stream) but fails to explicitly teach for enabling/disabling a decompression unit.

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Haddad et al. teaches that a control signal for enabling/disabling a decompression unit (Paragraph [0062] – remote control operable to turn off or on device, thereby disabling or enabling, respectively, a decompression unit). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a remote control send a signal to device to shut down or turn on, along with all the device elements as controlled by user input.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Choi whose telephone number is (571) 272-9594. The examiner can normally be reached on Monday - Friday 9:00AM - 5:30PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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